Optimal Health University™

Presented by Dr. Alan Cranton, DC, ND

Parents' Guide to Choosing PVC-Free Toys

The holiday season is upon us, and everyone is searching for the perfect gifts for the children in their lives. But it's easy to get caught up in the spirit of the season and focus on the smiles our gifts will elicit rather than their safety.

Dr. Cranton urges patients to always put safety first when buying children's toys, especially plastic ones. A wealth of research reveals that a type of plastic known as PVC, which is used in many soft plastic baby toys, can leach harmful chemicals into children's bloodstreams through their saliva.

Before you do any holiday shopping for children, please review the important information in this Optimal Health University™ handout about PVC and how to avoid it.

What Is PVC?

PVC (polyvinyl chloride or vinyl) is a type of plastic commonly used in soft plastic children's products, such as bath toys, squeeze toys and teething rings.

Phthalates (pronounced *thay-lates*) are added to make PVC soft for use in infant toys that are chewed and sucked.

PVC's uses expand far beyond baby toys; in fact, it is one of the most widely manufactured plastics. It is used in home furnishings, automobile parts, hospital supplies and hundreds of other products.

PVC's role in toys is not just limited to baby toys; it is also used to make toys for older children. In these toys, heavy metals like lead and cadmium are added to make it more durable, in turn producing even more toxic materials.

Are Children Ingesting These Chemicals?

Dr. Cranton explains to parents that the biggest problems with PVC toys for babies are that (1) the chemicals added to the PVC plastic to make it soft (phthalates) are not chemically bound to PVC and can leach out, and (2) babies chew or suck on these toys and the phthalates leach into their saliva. Studies show that the phthalates then show up in children's bloodstreams.

A 2007 study concluded that "exposure assessment … gives hints that the exposure of children to phthalates exceeds that in adults. Current human biomonitoring data prove that the tolerable intake of children is exceeded to a considerable degree in some instances up to 20-fold." (*Int J Hyg Environ Health* 2007;210:623-34.)

In a 2004 study out of Germany, researchers compared the internal exposure of a group of children aged 2 to 6 to DEHP [Di(2-ethylhexyl) phthalate — one of the phthalates added to PVC to soften it] to their parents' and teachers' exposure. The researchers concluded: "We estimated the DEHP dose (in microgram/kg body-weight) taken up by children to be about twice as high as the dose taken up by adults." (*Int J Hyg Environ Health* 2004;207:15-22.)

Another 2007 German study looked at the daily DEHP intake of 239 children aged 2 to 14 years. The researchers concluded:

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"In general, DEHP exposure was decreasing with increasing age and boys had higher exposures than girls… Younger children seem to be more severely burdened, which may be due to a higher food consumption related to their bw [body weight], mouthing behavior and/or playing near the ground." (*Int J Hyg Environ Health* 2007;210:35-42.)

Why Are Chemicals in PVC Dangerous?

The fact that children are ingesting these chemicals is especially disturbing because research reveals that phthalate exposure has serious health ramifications. Studies show that phthalates are linked to cancer and kidney damage — and may interfere with reproduction and development.

A 2007 study concluded that "some phthalates are reproductive and developmental toxicants in animals and suspected endocrine disruptors in humans … health concern is raised regarding the developmental and/or reproductive toxicity of phthalates, even in environmental concentrations." (*Int J Hyg Environ Health* 2007;210:623.)

A 2003 study in the journal *Pediatrics* states that "Phthalates are animal carcinogens and can cause fetal death, malformations, and reproductive toxicity in laboratory animals." (*Pediatrics* 2003;111:1467-74.)

And, alarmingly, these results go beyond animal studies. New phthalates research on human subjects reveals similar harmful effects. A recent epidemiologic study showed certain phthalates to be significantly associated with reduced anogenital distance in human male infants [shorter perineum], the first evidence of subtle developmental effects in human male infants exposed prenatally to phthalates (*Environ Health Perspect* 2006;114:805-9).

Legislation Regarding PVC in Children's Toys

The European Union and at least 12 other countries have banned or restricted PVC in children's toys.

In 2006, San Francisco became the first city in the US to ban phthalates in children's products. The Stop Toxic Toys bill, which bans two toxic chemicals — phthalates and bisphenol-A — from children's toys and feeding products, was signed into law by Mayor Gavin Newsom on June 16, 2006. The law took effect on December 1, 2006. Rachel Gibson, staff attorney for Environment California, says of the bill, "We cannot allow toxic chemicals to be used in products for young children, especially those specifically designed to be put into their mouths."

Environment California was also the sponsor of California legislation that would have imposed a statewide restriction on the use of phthalates and bisphenol-A in children's toys and feeding products. Says Gibson, "The California legislature failed to take appropriate action this year when it had the opportunity to do so. We applaud San Francisco for taking this significant step to protect our most vulnerable population."

Finding PVC-Free Toys

Doctors of chiropractic are extremely concerned about the long-term effects of toxic chemicals on children and urge parents to avoid toys that contain PVC.

There are other types of plastics that are naturally soft and don't contain these dangerous chemicals. Safer alternative plastics include polypropylene, polyethylene, EPM, EPDM, EVA and bio-based plastics.

To identify a PVC-based toy, look for the three-arrow recycling symbol with the number 3 or the initials PVC. If you aren't sure whether a product contains PVC or PVC parts, call the manufacturer's question or comment line, an 800 number usually listed on the bottom of the label or package.

There are toy companies that are committed to not producing toys with PVC. Seek out these companies. For more information, see Greenpeace's toy company report card — a list of Greenpeace's grades for toy companies based on their use of PVC: http://www.greenpeace.org/usa/news/2003-toy-report-card

Another option is to avoid plastic toys altogether, especially soft plastic toys. Instead, select toys made of organic cotton or certified sustainable wood. For some excellent non-plastic toy options, check out:

www.novanatural.com
www.magiccabin.com
www.thewoodenwagon.com